1965

STATUS OF FOREST INSECTS

CHALLIS NATIONAL FOREST - 1965

The following information on forest insect activity has been accumulated through aerial detection survey flights and followup on-the-ground biological evaluation during the 1965 field season. The two major insect problems were the spruce budworm and the Douglas-fir beetle. The section on the Douglas-fir beetle will discuss the problem of snow and windbreak as a result of winter storms during 1964-65.

Spruce budworm, Choristoneura fumiferana (Clem.)

No significant decrease in the overall extent of the spruce budworm infestation on the Challis National Forest was noted this year. The Challis infestation is actually a part of the huge Salmon River infestation which also covers much of the Salmon and portions of the Payette and Boise National Forests. A summary of infested acreage on the forest this year and last, as determined by aerial surveys, follows:

INFESTATION INTENSITY

YEAR	LIGHT	MEDIUM	HEAVY	TOTAL
1964	79,000	132,000	243,000	454,000
1965	83,200	20,500	297,600	401,300

Most of the infested acreage received heavy defoliation with the only significant change in defoliation intensity from 1964 to 1965 occurring in the medium category. Overall, the infestation boundaries changed very little in 1965. Relatively small areas of visible defoliation were found for the first time this year in Slate Creek and Woods Basin in the Salmon River Division and in Ramshorn Canyon and on the northeast side of Lone Pine peak in the Lost River Division.

Biological evaluation efforts were increased this year over previous years. Egg mass samples were taken from five areas on the forest, one in Morse Creek and four in major drainages within the infested area west of Challis. No on-the-ground evaluations were made in Loon and Spring Creeks nor in the Middle Fork of the Salmon and Rapid River drainages where heavy infestations persist.

Egg mass and pupal density samples from Douglas-fir foliage provide a reliable index as to next year's population level and resulting damage. The counts, respective collection areas, and damage predictions for 1966

are shown in the following table:

AREA	1965 DEFOLIATION PREDICTED (%)	1965 DEFOLIATION ACTUAL (%)	1965 COLLECTIONS EGG MASSES (1000 SQ.INCHES) (No.)	1965 COLLECTIONS PUPAL DENSITY (No.)	1966 EXPECTED DEFOLIATION (%)	TREND
Morse Creek	90-100	75-90	12.7	II	90-100	Inc.
Challis Cr.	51-90	75-90	8.4	I	90-100	Inc.
Morgan Cr.	-	-	0.0	-	15	Unknown
Big Hill Cr.	-	75-90	14.8	I	75-90	Unknown
Meyers Cove	-	-	2.0	-	15	Unknown

Morse and Challis Creeks are the only areas that were sampled for egg masses in 1964 and 1965 consequently, they are the only areas for which trend predictions can be accurately made.

No overall decrease in budworm damage is expected to occur in 1966. Little change in the present infestation boundaries is anticipated, however, intensity of damage can be expected to remain the same as this year or possibly increase in certain areas. It is doubtful whether natural control factors will materially change the anticipated course of the infestation. Aggressive feeding has occurred in some areas for several years and tree mortality has been observed in reproduction and pole size Douglas-fir. At present the mortality takes on a mosaic pattern and some dead trees exist in the medium and heavily defoliated areas. If the infestation continues at its present pace, additional mortality can be expected.

Douglas-fir beetle, Dendroctonus pseudotsugae Hopk.

Since 1962 a definite downward trend has been noticed in attacks of the Douglas-fir beetle, but there are still small group-type infestations occurring in widely scattered locations. At the present time the small group infestations appear to be associated with older and larger known areas of infestation. Due to a lack of time and manpower, on-the-ground investigations of most of the Douglas-fir beetle infested stands could not be made during the 1965 field season, but in those areas where evaluations were made, it appears that the Douglas-fir beetle is holding at a relatively low level of activity. Brood density counts were low compared to population levels of three years ago, and predators and parasites were numerous and active.

In late 1964 heavy snow and windstorms felled many thousands of trees scattered over relatively wide areas on the Forest. There is a possibility

that Douglas-fir beetle populations may build up in this damaged material and new infestation centers may result that will become evident during 1966. The blow-down and wind-break material was generally too small and scattered to present salvage possibilities.

In late December 1964, unseasonably warm weather and relatively heavy rains caused rapid snowmelt and thawing of the ground. Following the rain and thaw periods strong winds felled a considerable amount of Douglas-fir timber over a wide area.

In March 1965, a special aerial survey was made to determine the extent of damage and to pinpoint potential beetle hazard areas. Eight general areas of snow and windthrown timber were found on the Salmon River Division of the forest. These areas were mapped in and coincided almost exactly with the areas reported by the Forest Supervisor. A similar situation existed on the Lost River Division of the Challis.

Aerial observers found that relatively few areas of concentrated damage could be found. However, extensive areas of the forest had storm-thrown timber averaging from 1 to 150 stems per acre. Most of this material was in the 6 to 12 inch diameter classes. Damage was confined primarily to Douglas-fir and true firs on north-facing slopes. The rootballs of many of the wind-thrown trees had remained intact. As these trees would retain moisture throughout the summer they could carry a beetle population through to 1966.

Limited evaluations of conditions in downed timber were made during the fall in as many locations as possible. As would be expected with damage of this type scattered over such a large area, beetle buildups varied considerably from location to location. Almost without exception wherever Douglas-fir trees were affected, heavy beetle populations were found in the lower 180° of the tree boles. Where trees stayed moist, populations were found in all quadrants of the boles. Bark beetles that might build up in downed material in 1965 can be expected to emerge and make attacks in uninfected newly downed material in 1966. Also, the possibility of standing trees being attacked in the spring of 1966 would be increased. At the present time there is no way to estimate the number of infestation centers, or intensity of attacks that may develop, because the effects of parasites, predators, and climatological factors on brood survival, will not be known until spring. Examinations of at least some of the possible trouble spots will be made during the 1966 field season, and you will be informed of the results.

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Date

William H. Klein
Jerry A.E. Knopf, Entomologist, By